
Final

Main Site Cover Construction Work Plan

**For the
Former Celotex Site
2800 South Sacramento Avenue
Chicago, Illinois 60623**

Prepared for
Honeywell International Inc.

April 2007

US EPA RECORDS CENTER REGION 5



416475



CH2MHILL

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Executive Summary

This work plan presents the process that will be used to place clean (pursuant to Section 3.1.3) granular material to augment existing areas of the gravel cover (the "Cap") at the former Celotex Corporation (Celotex) Site (Main Site) located at 2800 South Sacramento Avenue in Chicago, Illinois. This work plan has been specifically prepared to address Paragraph 15(C) of the 2006 Administrative Settlement Agreement and Order on Consent for Removal Action (2006 AOC) and the accompanying Statement of Work (Appendix B, Subpart F of Task 2). The work plan has been prepared on behalf of Honeywell International Inc. (Honeywell).

The purpose of this work plan is to develop procedures for the following:

- 1) Placement of granular material at the Main Site to create a two foot gravel cover over the entire property.
- 2) Evaluation of the side slopes and placement of additional granular material as warranted to reduce erosion, support effective stormwater drainage, and create the two-foot-thickness.

Upon completion of the components of the Main Site Cover Construction Work Plan, a Cover Construction Documentation Report will be prepared and submitted to the United States Environmental Protection Agency (USEPA) to document completion of the construction activities.

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Acronyms and Abbreviations

AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
BAPEQ	Benzo(a)pyrene Equivalent
CA	Coarse Aggregate
CIC	Community Involvement Coordinator
Celotex	Celotex Corporation
EE/CA	Engineering Evaluation and Cost Analysis
HSP	Health and Safety Plan
Honeywell	Honeywell International Inc.
I/C	Industrial/Commercial
IEPA	Illinois Environmental Protection Agency
IDOT	Illinois Department of Transportation
MWRDGC	Metropolitan Water Reclamation District of Greater Chicago
Main Site	Former Celotex Site located at 2800 South Sacramento Avenue
Monarch	Monarch Asphalt
NELAP	National Environmental Laboratory Accreditation Program
PAH	polycyclic aromatic hydrocarbon
PCBs	polychlorinated biphenyls
PID	Photoionization detector
RPM	Remedial Project Manager
Sacramento	2600 Sacramento Corporation
SPLP	Synthetic Precipitation Leaching Procedure
SVOC	Semi-Volatile Organic Compounds
TACO	Tiered Approach to Corrective Action Objectives
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compounds

SECTION 1

Introduction

This work plan, prepared on behalf of Honeywell, presents proposed design and construction activities to augment the gravel cover (the "Cap") on those portions of the Main Site, which currently have a thickness of less than two feet and address the existing side slopes. In addition, this work plan also addresses placement of two feet of granular material on the approximately 2-acre portion of the Main Site that currently has no Cap. The Main Site encompasses the approximately 22-acre Celotex site where historical manufacturing activities took place, as illustrated on Figures 1-1 and 1-2, and does not include the surrounding Residential Areas.

A separate work plan titled Main Site Evaluation Work Plan (CH2M HILL 2006) was implemented to collect data on the current conditions at the Main Site and a report of findings (CH2M HILL 2007) was prepared. The results of this investigation are summarized in Section 2.3.

1.1 Objectives of the Cover Construction Work Plan

The primary objectives of this Cover Construction Work Plan are to identify the procedures to:

- Place two feet of granular material on the portion of the Main Site that currently have no Cap
- Add sufficient granular material to those portions of the Main Site, which currently have a Cap of less than 2 feet
- Place a Cap on the side slopes
- Recontour the side slopes
- Prepare a Cover Construction Documentation Report to document the construction activities

1.2 Project Organization

Following USEPA approval, CH2M HILL will be the lead engineer responsible for implementing the proposed actions within this work plan under the direction of Honeywell. Communications will occur regularly among Honeywell, CH2M HILL, and USEPA, with the following key points of contact as follows:

- USEPA Remedial Project Manager – Ms. Jena Sleboda
- Honeywell Remediation Manager – Mr. Chuck Geadelmann
- CH2M HILL Project Manager – Mr. Joel Wipf

USEPA has primary responsibility for community involvement at the Main Site. Honeywell will provide support to USEPA as requested by the Remedial Project Manager (RPM) and

Community Involvement Coordinator (CIC) and will coordinate activities through USEPA's RPM and CIC.

1.3 Organization of the Work Plan

This Main Site Cover Construction Work Plan is organized as follows:

Section 1, Introduction, introduces the Main Site, identifies the work plan components, describes the objectives of the Cover Construction Work Plan, and outlines the project and work plan organization.

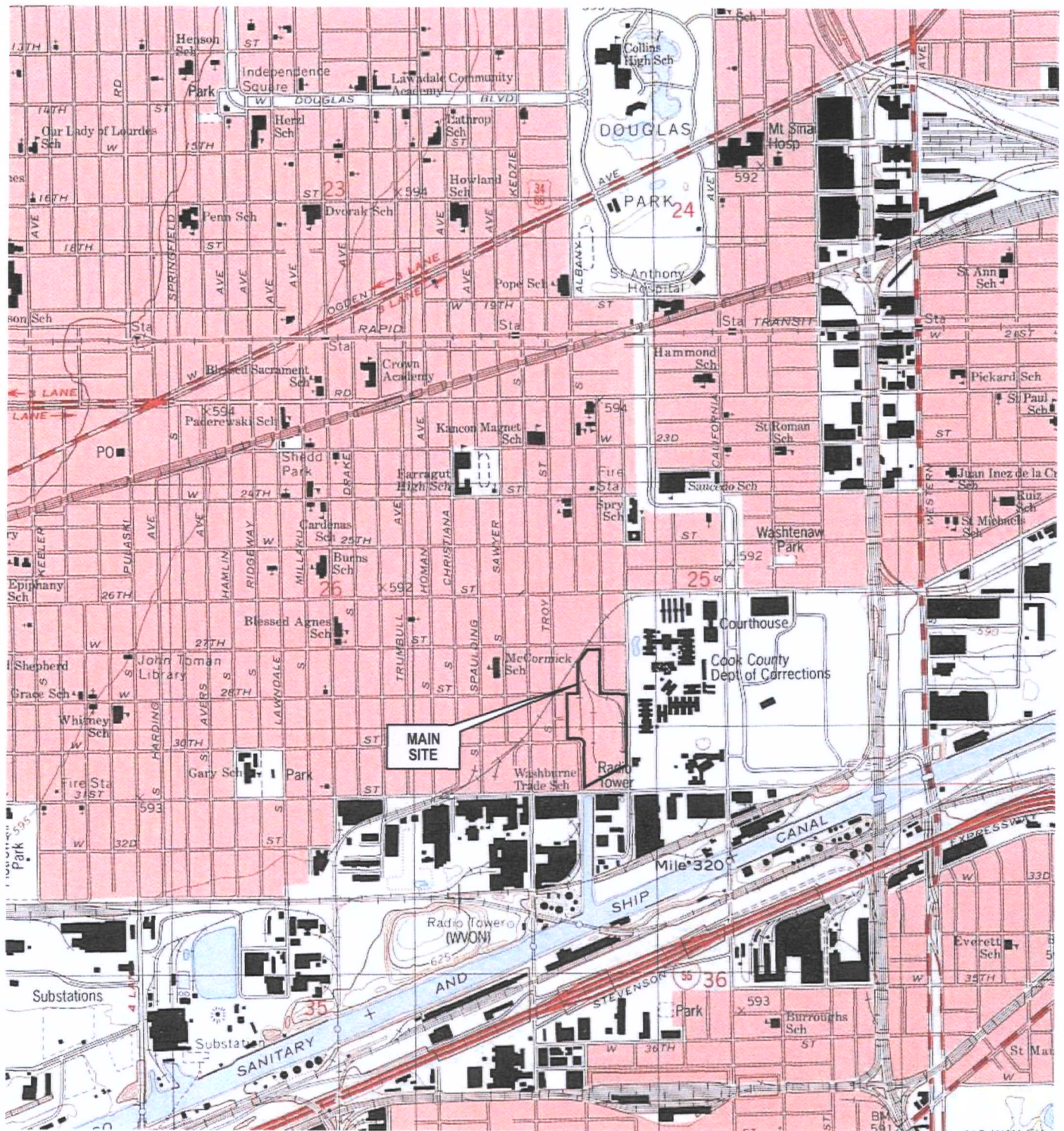
Section 2, Main Site Setting and History, provides an overview of the physical site setting and Main Site history, including certain past operations, previous investigations, and subsequent site activities.

Section 3, Cover Extension and Augmentation Procedures, identifies the objectives and describes the procedures to be used to extend and augment the Main Site cover with granular material to a minimum thickness of 2 feet.

Section 4, Cover Construction Documentation Report, presents the general outline of the documentation report.

Section 5, Project Schedule, presents the anticipated design and construction schedule based on the scope of the project, and identifies key activities and delivery dates.

Section 6, References, presents a listing of works referenced during compilation of the Main Site Cover Construction Work Plan.



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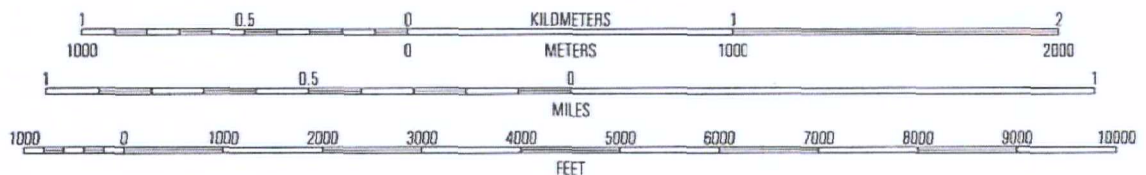
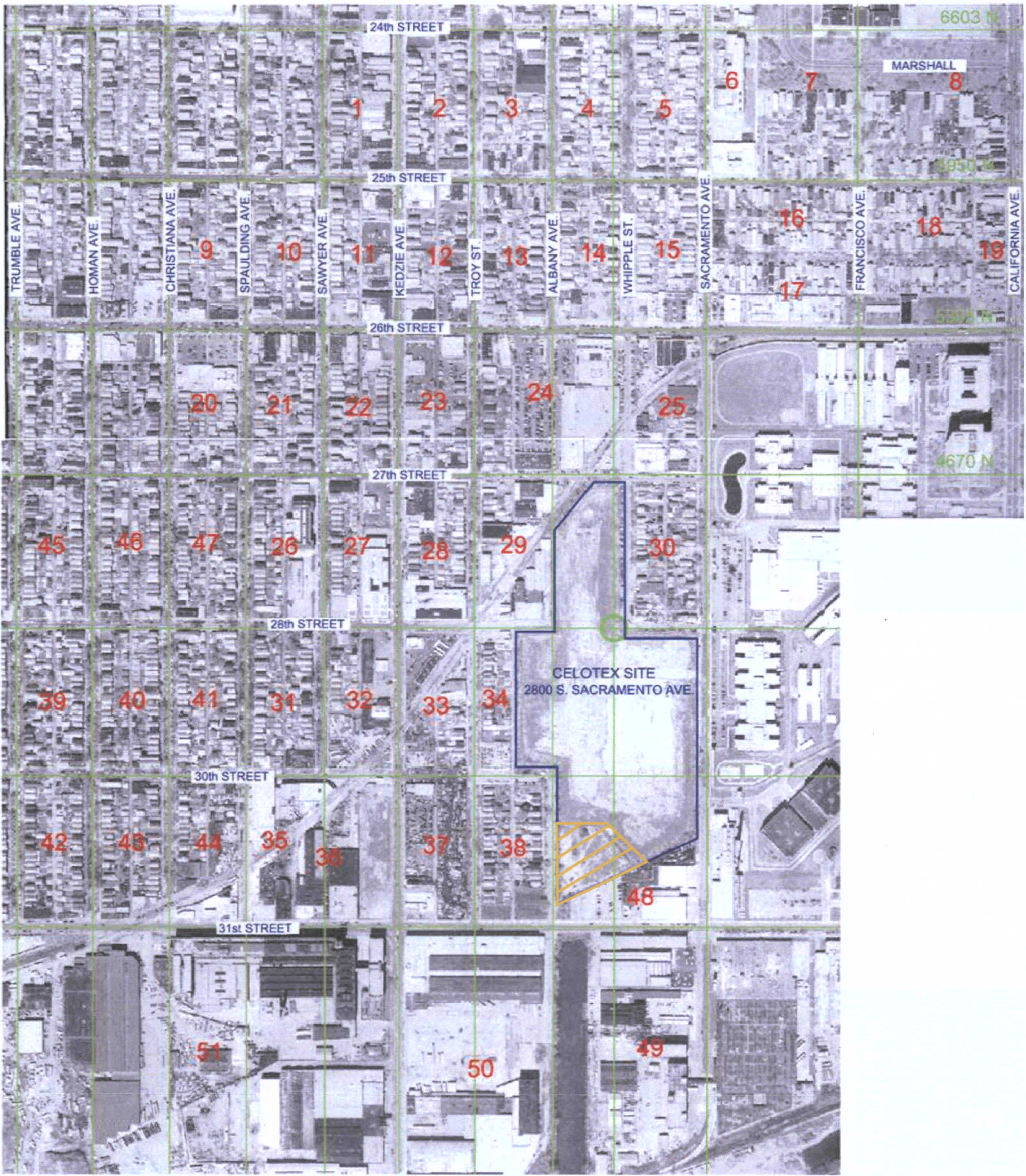


Figure 1-1
Main Site Location
Main Site Cover Construction
Work Plan
Former Celotex Site
Chicago, Illinois



LEGEND

27 Block Number

— Northing and Easting Lines

— Main Site

Approximate Monarch Parcel



Figure 1-2
Aerial Photograph
Main Site Cover Construction
Work Plan
Former Celotex Site
 Chicago, Illinois
CH2MHILL

SECTION 2

Main Site Setting and History

This section summarizes relevant aspects of the Main Site setting and history based on review of currently available documentation related to past site activities.

2.1 Main Site Setting

The former Celotex Main Site consists of an approximately 20- (19.66)-acre parcel currently owned by 2600 Sacramento Corporation (Sacramento), and an approximately 2- (1.65)-acre parcel currently owned by Monarch Asphalt (Monarch). The United States Geological Survey (USGS) reference for the Main Site location indicates that it is situated in the West 1/2 of the Southwest 1/4 of Section 25, Township 39 North, Range 13 East of the Third Prime Meridian on the Englewood 7.5 Minute Quadrangle.

The Main Site is situated in a multi-use area that includes residential, commercial, manufacturing, governmental, and industrial establishments. The Cook County Correctional Facility is located east of the Main Site on the east side of Sacramento Avenue and the former Atchison, Topeka & Santa Fe railroad line crosses a portion of the area to the northwest. Residential and commercial properties are located north, west and northeast of the Main Site and industrial property is located to the south. The Chicago Sanitary and Ship Canal is located approximately 1,500 feet south of the Main Site.

The top of the Sacramento parcel is uniformly graded (approximately 1%) with side slopes around the perimeter ranging from 3H:1V to 1H:1V. The Sacramento parcel is fenced at the base of the side slopes with a main gate on South Sacramento Avenue near 28th Street. The Monarch parcel fence follows the property boundary and separates it from the Sacramento parcel with a locked gate present off Albany Avenue. Few other permanent features are present at either parcel.

2.2 Main Site History

The Main Site was used for making, storing, and selling asphalt-roofing products. Former operations at the 22-acre Main Site during the approximate period of 1911 to 1989 may have resulted in the release of polycyclic aromatic hydrocarbons (PAHs) to the ground and into the air. Facility closure (1989), demolition of the Main Site (1993), and subsequent actions have all taken place and it has been determined that there are no known ongoing releases, associated with historical operations, occurring from the Main Site.

Currently, the 20-acre Sacramento parcel is elevated compared to surrounding grade. The portion of the Site that is above surrounding grade consists of a bottom clay layer ("Cover"), a middle soil layer ("Fill"), and the Cap. The placement of the Cover, Fill, and Cap materials on the Main Site post-dates Honeywell's ownership of the Main Site by many years.

Based on a review of the limited documentation concerning the materials, Honeywell understands the history of placement of the Cover, Fill, and Cap materials to be as follows, although exact timing and sequencing is unknown.

First, following completion of facility demolition (during which crushed building materials may have been used as site fill), the “Cover” was placed over the Sacramento parcel. The Cover is approximately two feet thick. The source of the clay has not been verified; however, a letter from Environmental Resources Management Group to USEPA indicates it was undisturbed material generated during a construction project at the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) wastewater treatment plant in Stickney, Illinois.

Second, the Fill, which consists of miscellaneous soil from other sources, including possibly soil material from a construction project at the Cook County Jail, was likely placed on top of the “Cover.” Honeywell does not have information concerning when the “Fill” placement activities took place or the precise thickness of the “Fill.” It is Honeywell’s understanding that the “Fill” was placed on the Site by the Celotex Corporation. A site survey documenting the site topography after the clay “Cover” and “Fill” placement was prepared in 1996 by Westshore Engineering and Surveying.

“Cover” and “Fill” materials and the underlying soils were sampled in 1997 in connection with an Engineering Evaluation and Cost Analysis (EE/CA) performed by Honeywell pursuant to a prior Administrative Order on Consent. Samples were also collected from the Monarch parcel.

In 1997, following placement of the “Cover” and “Fill” materials and the EE/CA sampling, re-grading of the Sacramento parcel was conducted in accordance with a Storm Water Management Plan to address storm water runoff issues. Neither the final topography of the Sacramento parcel nor the resulting thickness of the reworked “Cover” and “Fill” were documented after the storm water management plan implementation.

Third, in or about 2002, 2600 Sacramento Corporation placed the Cap, with a reported thickness of 2 feet of gravel over the “Fill” and “Cover” materials in order to prepare the Sacramento parcel for truck staging operations. The precise placement and source of the “Cap” material are unknown to Honeywell.

Following the completion of the EE/CA, USEPA issued an Action Memorandum (March 2005 Action Memorandum) finding that subsurface contaminants should be addressed by the placement of 2 feet of granular material on the Main Site (to the extent one was not already in place) and the recording of certain restrictive covenants. Honeywell and USEPA subsequently entered into a second Administrative Order on Consent (2006 AOC) whereby Honeywell agreed to perform the activities set forth in the March 2005 Action Memorandum. The development of this Main Site Cover Construction Work Plan is one of the tasks under the 2006 AOC.

2.3 Main Site Evaluation Results

The Main Site Evaluation Work Plan (CH2M HILL 2006) was implemented to address the survey and sampling data needs for the Main Site Cover Construction Work Plan. The objectives of the Main Site Evaluation were to:

- Gather physical and analytical data associated with the “Cap”, “Fill”, and “Cover” materials.
- Survey the entire 22-acre Main Site (Sacramento and Monarch parcels) and existing top of the Gravel “Cap” and, using data from the soil borings, determine the thickness of the Gravel Cap, Fill, and Cover materials across the 20-acre Sacramento parcel.

Eighty-four soil borings were advanced for sample collection and characterization of the Cap, Fill, and Cover materials present at the Sacramento parcel. A discrete sample of the “Cap”, “Cover”, and “Fill” materials with the highest photoionization detector (PID) reading was collected from each boring and submitted for volatile organic compound (VOC) analysis by an independent laboratory. Three composite samples consisting of aliquots from the four borings per acre were submitted to the independent laboratory for analysis of semi-volatile organic compounds (SVOCs), metals, synthetic precipitation leaching procedure (SPLP) metals, pesticides, herbicides and polychlorinated biphenyls (PCBs).

None of the “Cap”, “Cover”, and “Fill” samples submitted during the Main Site Evaluation (CH2M HILL 2007) exceeded the Illinois Environmental Protection Agency’s (IEPA’s) Tiered Approach to Corrective Action Objectives (TACO) Industrial/Commercial (I/C) Tier 1 screening criteria for non-polycyclic aromatic hydrocarbons (PAHs), SVOCs, metals, VOCs, PCBs, pesticides, or herbicides. Metals were detected in the Cap samples in concentrations typical for natural materials. In a subset of the samples collected from the “Cap”, “Cover”, and “Fill”, one or more of seven PAH constituents had exceedances of the TACO I/C Tier 1 ingestion screening criteria and the Chicago area background concentrations. However, average benzo(a)pyrene equivalent (BAPEQ) values for the Cap (1.13 mg/kg), Fill (4.90 mg/kg), and Clay Cover (1.98 mg/kg) are below either IEPA-published values of 2 mg/kg BAPEQ or the area-specific value of 5 mg/kg BAPEQ.

The entire Main Site was topographically surveyed by an Illinois registered land surveyor to record and evaluate the current surface landscape. The conducted survey also documents the horizontal coordinates and elevation of the 84 soil boring locations. The area of the Main Site has been revised downward from previous reporting based on information from the conducted survey, with the Main Site consisting of approximately 22 acres, subdivided into the 20-acre Sacramento parcel and 2-acre Monarch parcel, as indicated in Section 2.1.

“Cap” material consists of predominately silty sandy gravel, dry to moist, light to medium-gray, with cobbles up to approximately 3 inches in diameter. Concrete debris are often present with lesser amounts of brick fragments. The “Cap” material consistency ranges from loose to dense. The “Cap” layer is generally thinnest adjacent to the southern and eastern side of the Main Site. The layer thickens toward the center, western, and northern portions of the site. The thickest portions of the “Cap” layer are north of 28th Street. The thickness of the “Cap” layer across the site is less than 2 feet in all 84 sampled locations except one.

SECTION 3

Cover Extension and Augmentation Procedures

This section details the technical approach and procedures that will be used to place granular material on the portion of the site without any Cap and to augment those portions of the Main Site currently with a Cap that is less than two feet thick. Details regarding health and safety requirements will be addressed in a HSP Addendum that will be developed prior to work plan implementation. The current topography of the site, documented during the Main Site Evaluation, is shown on Figure 3-1. The observed thickness of the Cap documented during the Main Site Evaluation is shown on Figure 3-2.

3.1 Cover Design

Using the physical characterization data from the Main Site Evaluation borings and the survey, a figure presenting the thickness of new granular material required to obtain the minimum 2-foot-thickness will be prepared to support the design. The contour interval for the proposed granular material will be 0.1 feet. The plan will also include drainage improvements to reduce erosion and address stormwater.

3.1.1 Granular Cover Extension – Monarch Parcel

A single layer of granular material will be placed over the approximate 2-acre parcel Monarch parcel (currently without cover materials), located in the southwest corner of the Main Site. This single layer will consist of a minimum of 2 feet of compacted granular material. The granular material will be placed and compacted in 12-inch-thick layers (maximum loose thickness). Vibratory rollers, vibrating tampers, or other equipment suitable for compaction of coarse-grained soil will be used. The moisture content of the material should be adjusted as necessary to achieve dense compaction.

The proposed general cross section for the Monarch parcel is shown in Figure 3-3. The transition from the cover to existing grade will have a maximum slope of 3 horizontal to 1 vertical. This material will prevent direct contact with impacted soil, as required in the Enforcement Action Memorandum (USEPA 2005).

3.1.2 Augmentation of Cover with Granular Material – Sacramento Parcel

The existing “Cap” will be augmented with granular material to produce a uniform, minimum 2-foot-thickness using certified clean granular material brought from an off site source. Imported granular material for augmentation will meet the material and placement specifications described in Section 3.2.3.

A conceptual design for repairing/re-grading the side slopes on the 20-acre Sacramento parcel with existing material is presented in Figure 3-4. Portions of the side slopes have approximate slopes up to 1 horizontal to 1 vertical, according to the Main Site Evaluation prepared survey and topographic map. The final slope of the perimeter area will match the surrounding fence line elevation, create the appropriate slope angle to prevent “Cap” erosion, facilitate drainage, and support future end use of the site.

Vegetation and debris present on the side slopes will be removed as needed prior to the start of construction. Any “Cap” material present on the side slopes will be excavated and temporarily stockpiled for reuse. Portions of the soil present below the “Cap” material on the side slopes will be excavated in order to construct the designed slope angle and allow the placement of a 2-foot thick layer of compacted gravel material on the new side slope surface. The excavated material will either be stockpiled for reuse for construction of side slopes or managed offsite. Disposition of excess material from slope re-grading activities will be determined based on information collected during the Main Site Evaluation analytical program (CH2M HILL 2007). In-place concrete structures uncovered by construction activities will be either left in place where possible or removed. As needed, granular material will be placed and compacted after the side slopes are re-graded to create a minimum 2-foot-thick layer of “Cap” material.

3.1.3 Material Specifications

Final specifications for imported granular material will be developed during the design and specification preparation stage. An Illinois Department of Transportation (IDOT) specification coarse aggregate (CA), such as a CA-6, obtained from an IDOT approved supplier, will be specified for the granular Cap material. One grab sample per imported granular material will be collected and analyzed for grain-size distribution (ASTM D422) to verify consistency in the material and to ensure that it meets IDOT Standards. In addition, granular material samples will be submitted for analysis by an independent, National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory. Samples of the imported granular material will be analyzed for the following parameters:

- SVOCs by USEPA Method 8270
- Arsenic beryllium, cadmium, chromium, lead, mercury, nickel, copper, selenium, silver, thallium, and zinc by USEPA SW6000/7000 series methods (using 6010 where appropriate)
- SPLP metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by USEPA Method 1312/6020/7471
- Pesticides/Herbicides by USEPA Methods 8081 and 8051A, respectively
- PCBs by USEPA Method 8082

The results will be compared to the IEPA TACO I/C criteria for screening purposes.

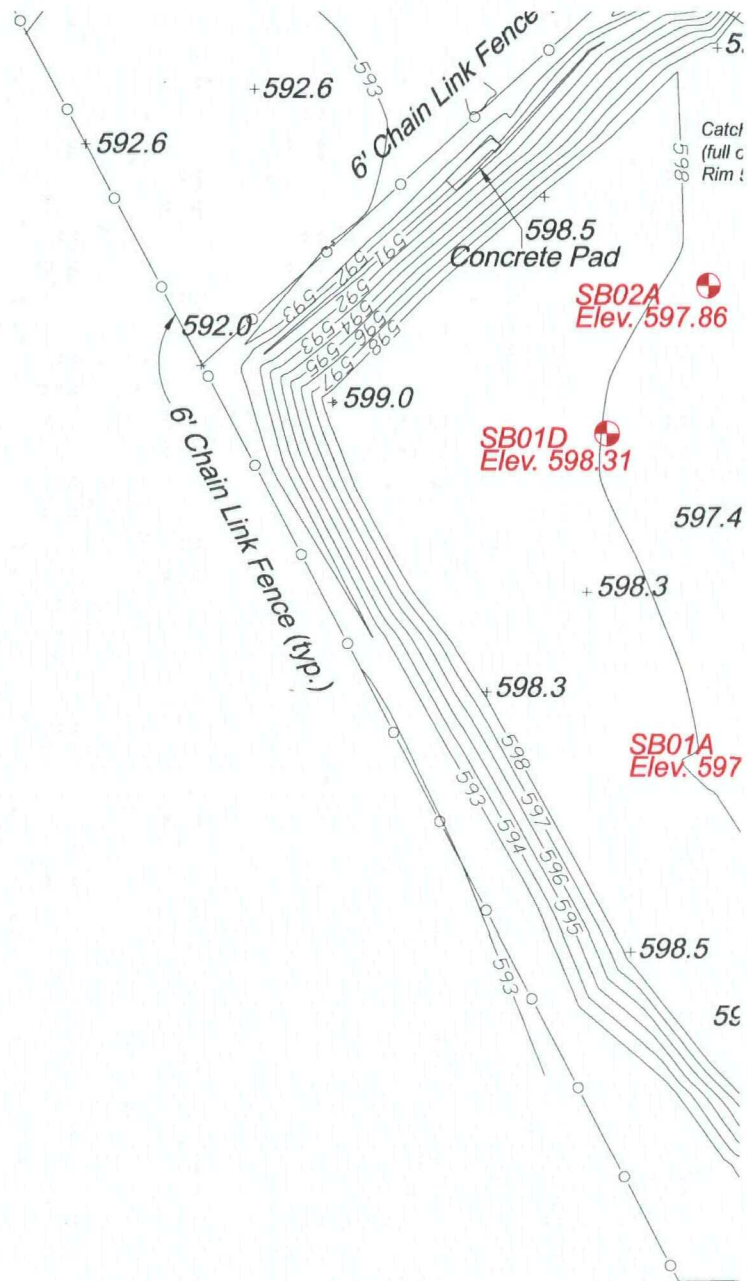
3.1.4 Truck Hauling Routes

Truck hauling routes for the importation of granular material to the site will be determined based on the amount of material required in the design and the selection of an off site borrow source by the construction contractor. It is anticipated that the Main Site entrance gate on South Sacramento Avenue will be used for ingress/egress to the site. South Sacramento Avenue currently supports heavy truck traffic. Access to the Monarch parcel will be from the gates located off South Albany Avenue.

3.2 Survey Documentation

The thickness of the final granular cover will be documented on a 50-foot grid and at key locations by surveying. The minimum acceptable granular thickness will be two feet following

placement and compaction, measured perpendicular to horizontal. The minimum acceptable granular material thickness will be calculated using the surveyed thicknesses of the “Cap” evaluated during the Main Site Evaluation Report and comparing it to the final survey after the placement of the final granular cover.



BASEMAP SOURCE:
BOLLINGER, LACH & ASSOCIATES, INC.
NAD 83, STATE PLANE, IL (EAST)

rt05c007_327757.dgn

BASEMAP SOURCE:
BOLLINGER, LACH & ASSOCIATES, INC.
NAD 83, STATE PLANE, IL (EAST)

SOUTH ALBANY AVENUE

SOUTH TROY STREET ALLEY

LEGEND

- 12.5 — ISOPACH LINES (CONNECTING POINTS OF
EQUAL THICKNESS) AT 0.25 FOOT INTERVALS
- SB20A 1.00 SOIL BORING AND GRAVEL CAP THICKNESS (FEET)

27TH STREET

SOUTH WHIPPLE STREET

28TH STREET

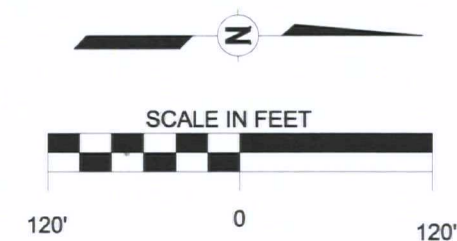
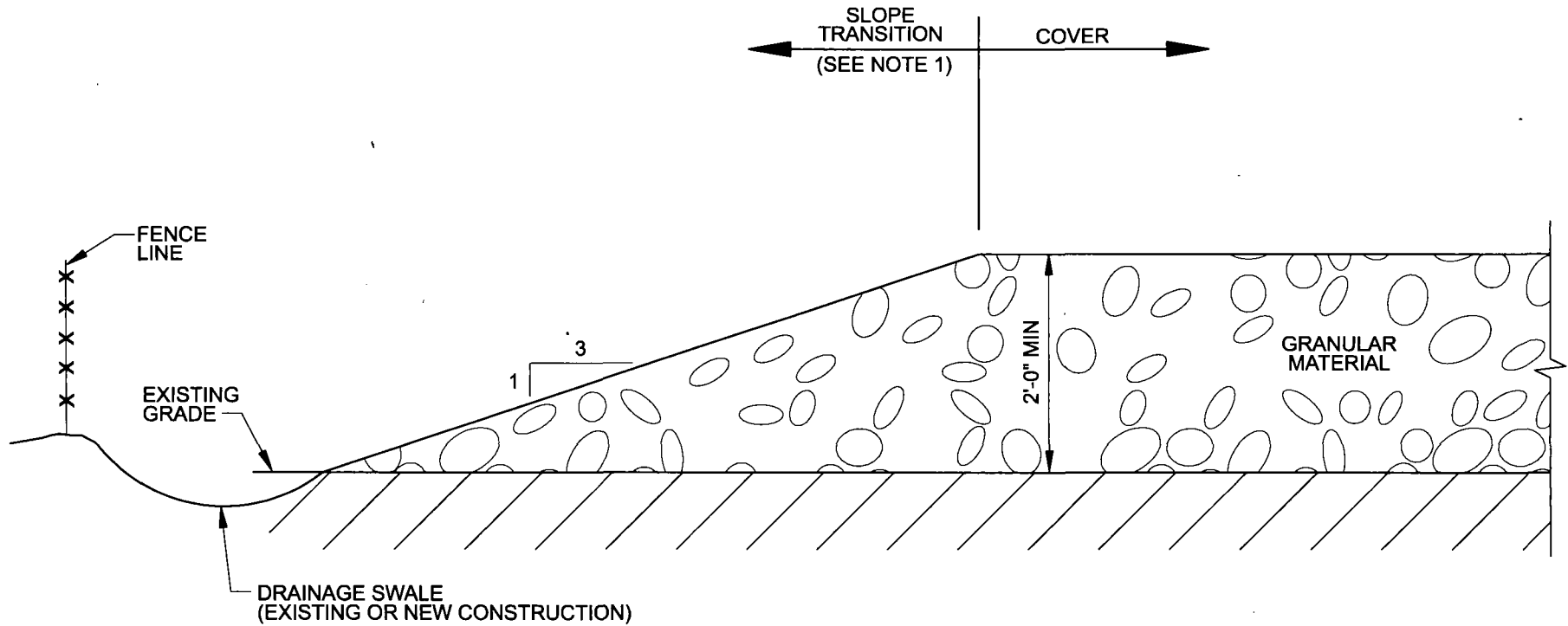


Figure 3-2
2006 Gravel Cap Isopach Map
Main Site Cover Construction Work Plan
Former Celotex Site - Chicago, IL

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Cover Detail

NTS

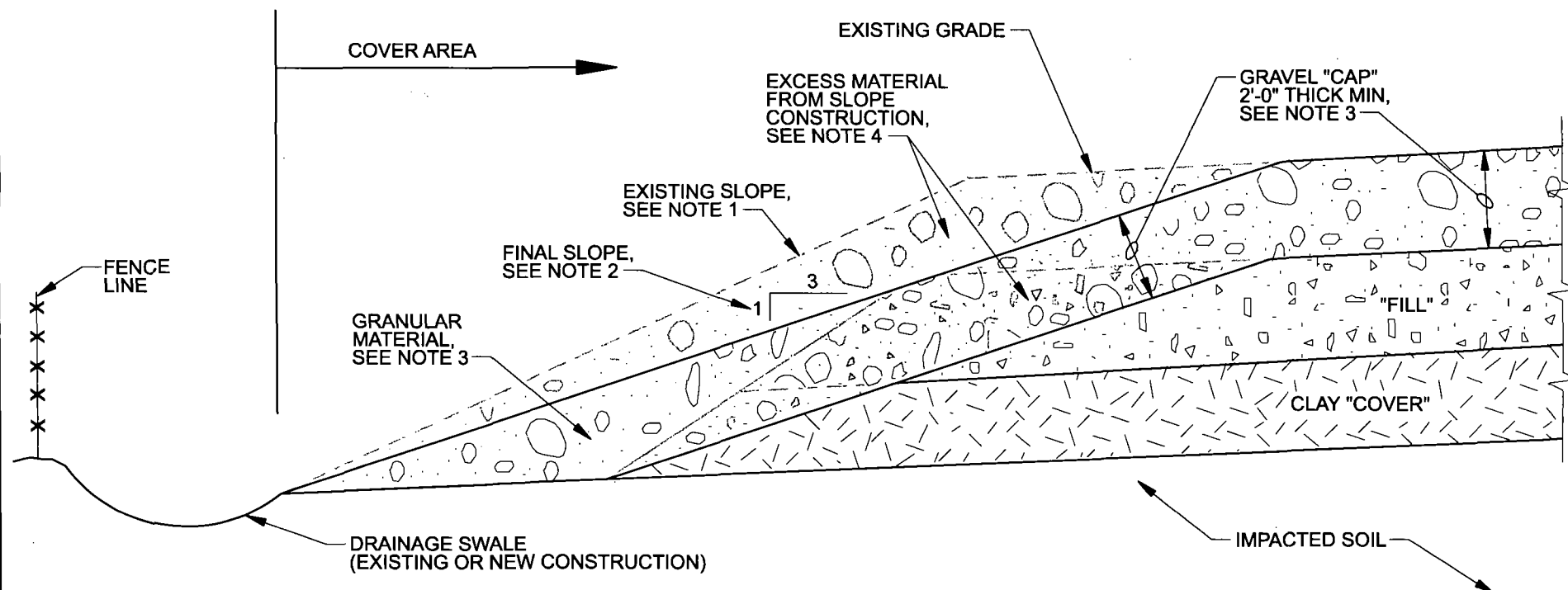
NOTE:

1. TRANSITION GRANULAR MATERIAL TO EXISTING GRADE AT MAX 3:1 SLOPE.

Figure 3-3

Cover Detail (Monarch)
Main Site Cover Construction Work Plan
Former Celotex Site
Chicago, Illinois

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Conceptual Slope Repair Detail

NTS

NOTES:

1. EXISTING SLOPE TO BE CONFIRMED DURING IMPLEMENTATION OF MAIN SITE EVALUATION WORK PLAN. VEGETATION AND GRAVEL CAP WILL BE REMOVED PRIOR TO SLOPE REGRADING.
2. FINAL SLOPE TO BE CONSTRUCTED AT 3H : 1V FOR COMPACTED GRAVEL. FILL WILL BE REMOVED OR ADDED TO CONSTRUCT FINAL SLOPE.
3. AS NEEDED, PLACE GRANULAR MATERIAL TO AUGMENT EXISTING GRAVEL "CAP" FOR A MINIMUM 2 FEET THICK LAYER.
4. DISPOSITION OF EXCESS MATERIAL FROM SLOPE REGRADING TO BE DETERMINED BASED ON ANALYTICAL TESTING PERFORMED AS PART OF THE MAIN SITE EVALUATION WORK PLAN. MATERIAL WILL BE REUSED OR DISPOSED.

Figure 3-4

Conceptual Slope Repair Detail

Main Site Cover Construction Work Plan
Former Celotex Site
Chicago, Illinois

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SECTION 4

Cover Construction Documentation Report

Following data evaluation, a Cover Construction Documentation Report will be prepared and submitted to USEPA. A proposed outline of the Cover Construction Documentation Report is presented below.

Cover Construction Documentation Report Outline

Executive Summary

1. Introduction
 - 1.1 Purpose of Report
 - 1.2 Main Site Background
 - 1.2.1 Main Site Description
 - 1.2.2 Main Site History
 - 1.2.3 Previous Investigations
 - 1.2.4 Physical Setting
 - 1.3 Report Organization
2. Summary of Survey and Sampling Evaluations
 - 2.1 Cap, Cover and Fill Thickness
 - 2.2 Material Observations
3. Main Site Cover Construction Documentation
 - 3.1 Certification of Clean Granular Material
 - 3.2 Survey Documentation and Validation
 - 3.3 Topographic Update
4. Conclusions
5. References

SECTION 5

Project Schedule

A formalized project schedule for implementation of the Cover Construction Work Plan will be developed in conjunction with USEPA following work plan approval.

SECTION 6

References

CH2M HILL. *Final Main Site Evaluation Work Plan for the Former Celotex Facility, 2800 South Sacramento Avenue, Chicago, Illinois*. October 2006.

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